

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

**(19) World Intellectual Property Organization  
International Bureau**



(43) International Publication Date  
2 June 2005 (02.06.2005)

PCT

(10) International Publication Number  
**WO 2005/050871 A1**

**(51) International Patent Classification<sup>7</sup>:** H04B 7/185

[KR/KR]; #115-1302 Clover Apt., Dunsan-dong, Seo-gu, Daejon 302-120 (KR). EUN, Jong-Won [KR/KR]; #502-1702 Expo Apt., Jeonmin-dong, Yuseong-gu, Daejon 305-762 (KR). LEE, SEONG-PAL [KR/KR]; #109-602 Cheonggu Narae Apt., Jeonmin-dong, Yuseong-gu, Daejon 305-729 (KR).

(21) International Application Number:  
PCT/KR2004/002994

(74) Agent: SHINSUNG PATENT FIRM; 2F, Line Bldg., 823-30, Yeoksam-dong, Kangnam-ku, Seoul 135-080 (KR).

**(22) International Filing Date:** 18 November 2004 (18.11.2004)

**(25) Filing Language:** English

(26) Publication Language: English

**(30) Priority Data:**

19 November 2003 (19.11.2003) KR

(71) Applicant (*for all designated States except US*): ELECTRONICS AND TELECOMMUNICATIONS RESEARCH INSTITUTE [KR/KR]; 161, Gajeong-Dong, Yusong-gu, Daegu 305-350 (KR)

(72) Inventors; and  
(75) Inventors/Applicants (for U.S. only): IQ Jin-Ho

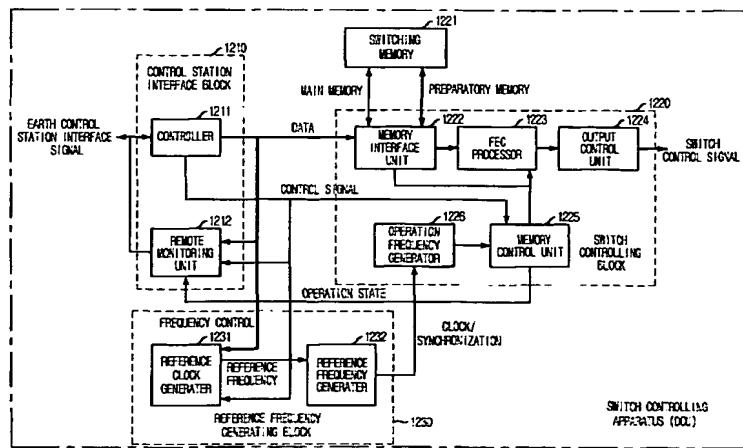
[KR/KR]; #125-1105 Hanbit Apt., Eoeun-dong, Yuseong-gu, Daejon 305-755 (KR). **CHOI, Kyung-Soo**

(81) Designated States (*unless otherwise indicated, for every kind of national protection available*): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(84) Designated States (*unless otherwise indicated, for every kind of regional protection available*): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI,

*[Continued on next page]*

(54) Title: APPARATUS AND METHOD FOR CONTROLLING SWITCH OF SATELLITE TRANSPONDER FOR MULTI-BEAM COMMUNICATION



**(57) Abstract:** Provided are an apparatus for controlling a switch of a satellite transponder for multibeam communication, and a method thereof. The apparatus and method can increase output efficiency of communicated satellite electric wave signals and reuse frequencies in one-to-one earth station communication or a one-to-multi earth station communication. The apparatus includes: an earth control station interfacing block for receiving and processing commands from an earth control station, collecting operation states of the switch controlling apparatus and reporting them to the earth control station; a reference frequency generating block for generating a reference clock needed to operate the switch controlling apparatus and generating a reference frequency based on the reference clock; and a switch controlling block for reading contents of a memory storing a switching sequence periodically, detecting and correcting errors of the contents to generate a switch control signal, and transmitting the signal to a radio frequency switch.



FR, GB, GR, HU, IE, IS, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

*For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.*

**Published:**

— *with international search report*